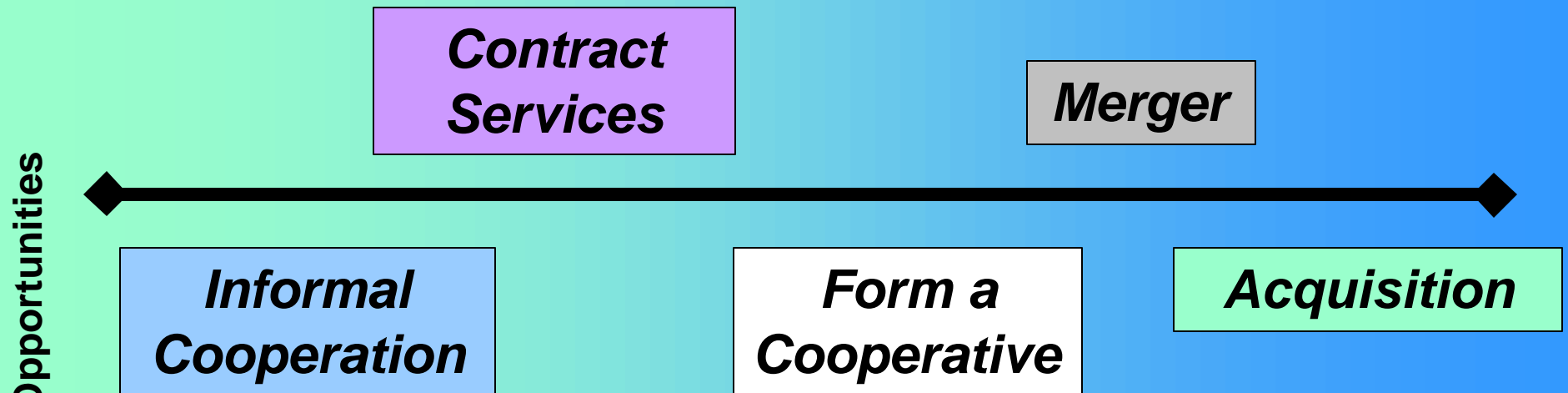



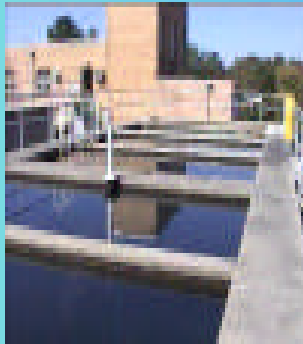
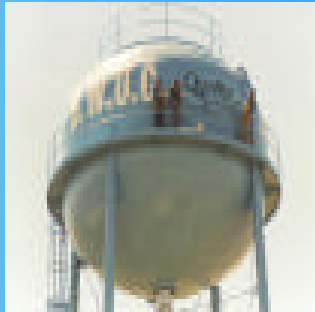

Partnerships & Water System Organizational Structures

System Partnership Spectrum



Assessing System Partnership Potential

Assessing External Opportunities

| <div> <div>← Governance →</div> <div>← Management →</div> <div>← Operations →</div> </div> | | | | |
|--|--|--|--|---|
| |  <div>Source Water</div> |  <div>Treatment</div> |  <div>Storage & Distribution</div> |  <div>Retail Services</div> |
| Offer | | | | |
| Acquire | | | | |

Alternative Spatial Boundaries

Assessing External Opportunities



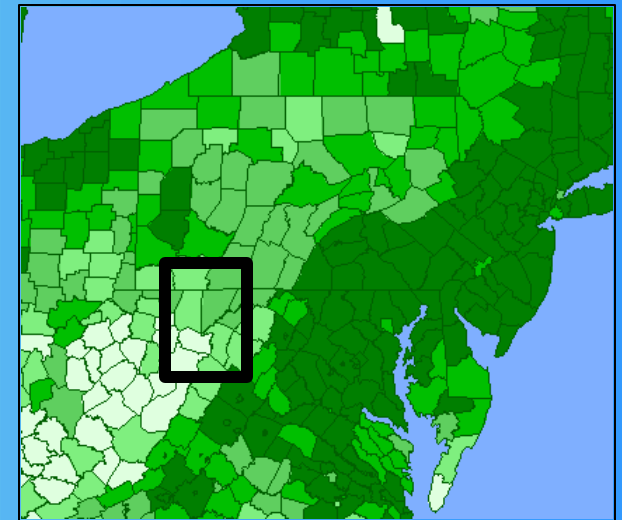
**Single
System**



**Multiple
Systems**

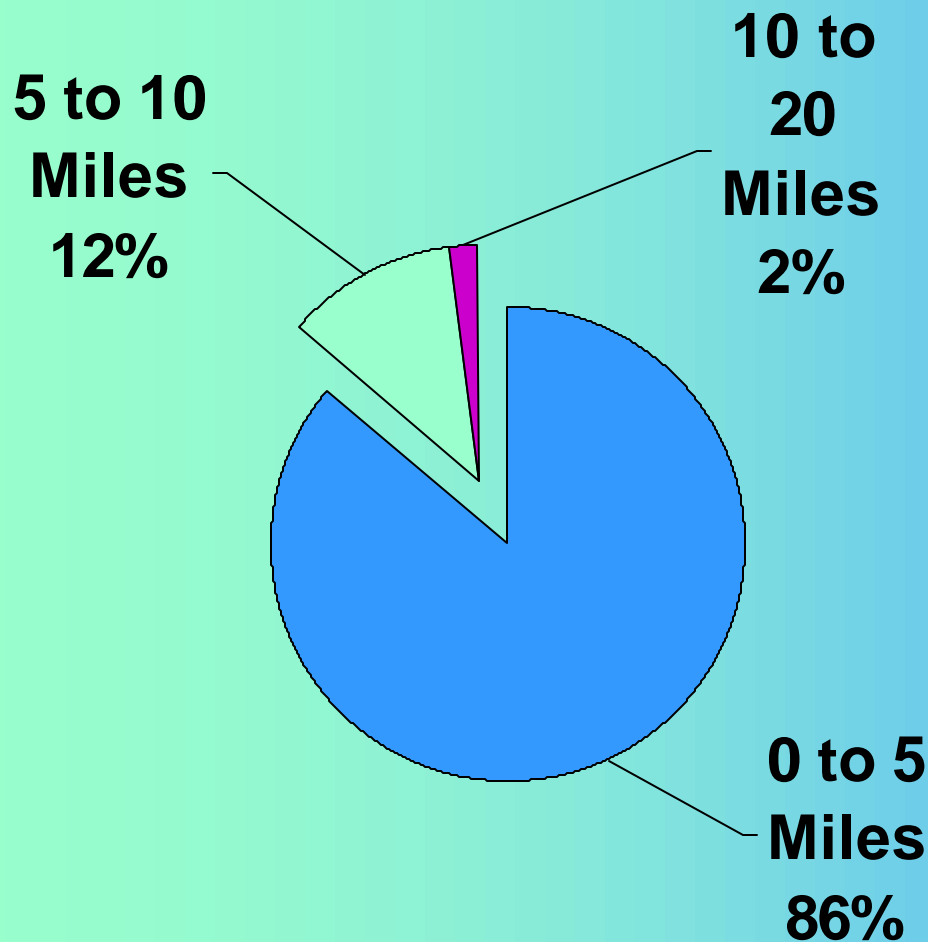


**County /
Multi-county**



State Wide

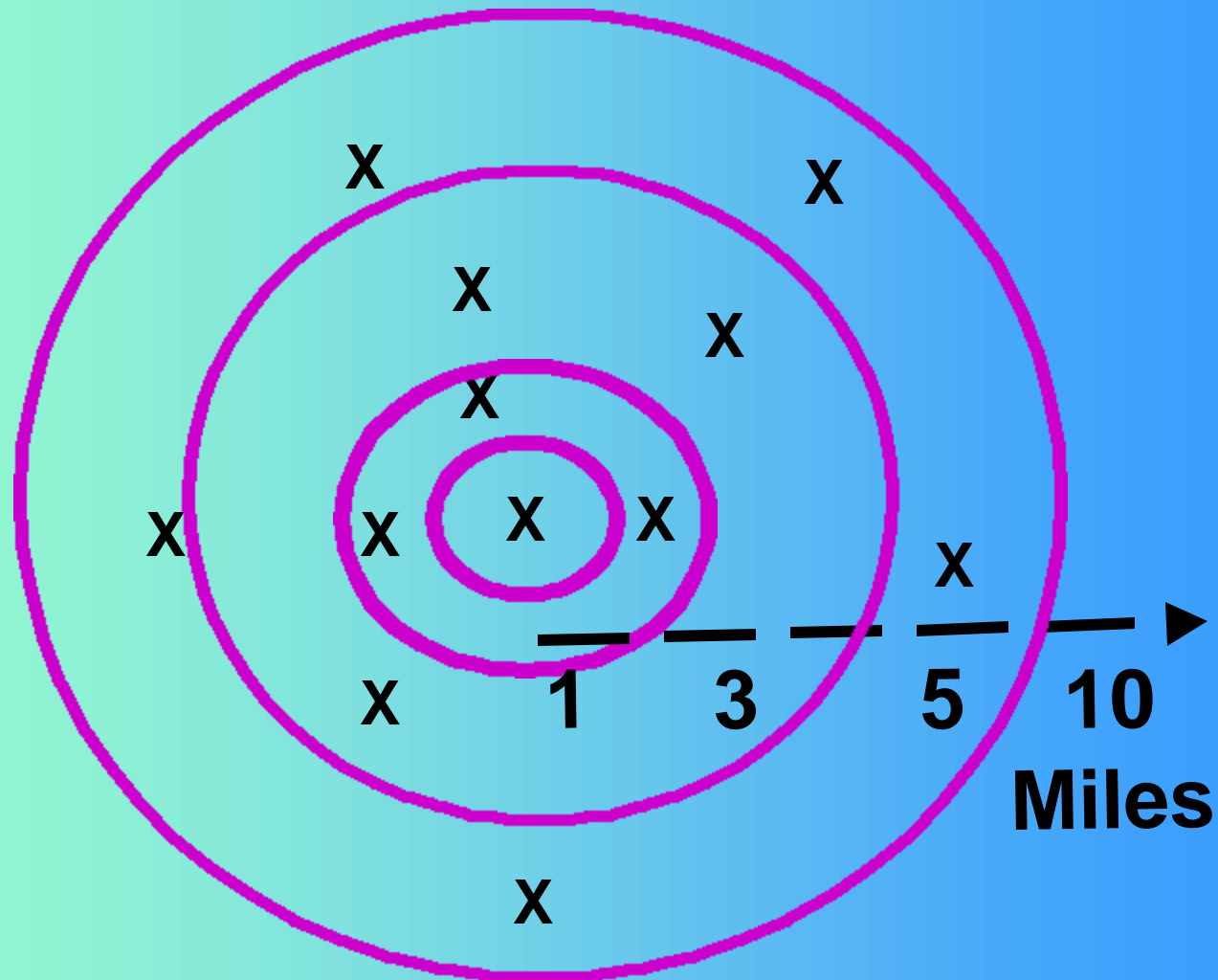
Distance to the Next Closest CWS



- 86% of Small Systems Are within 5 Miles of Another System
- Nearly 100% of Small Systems Are within 20 Miles of Another System

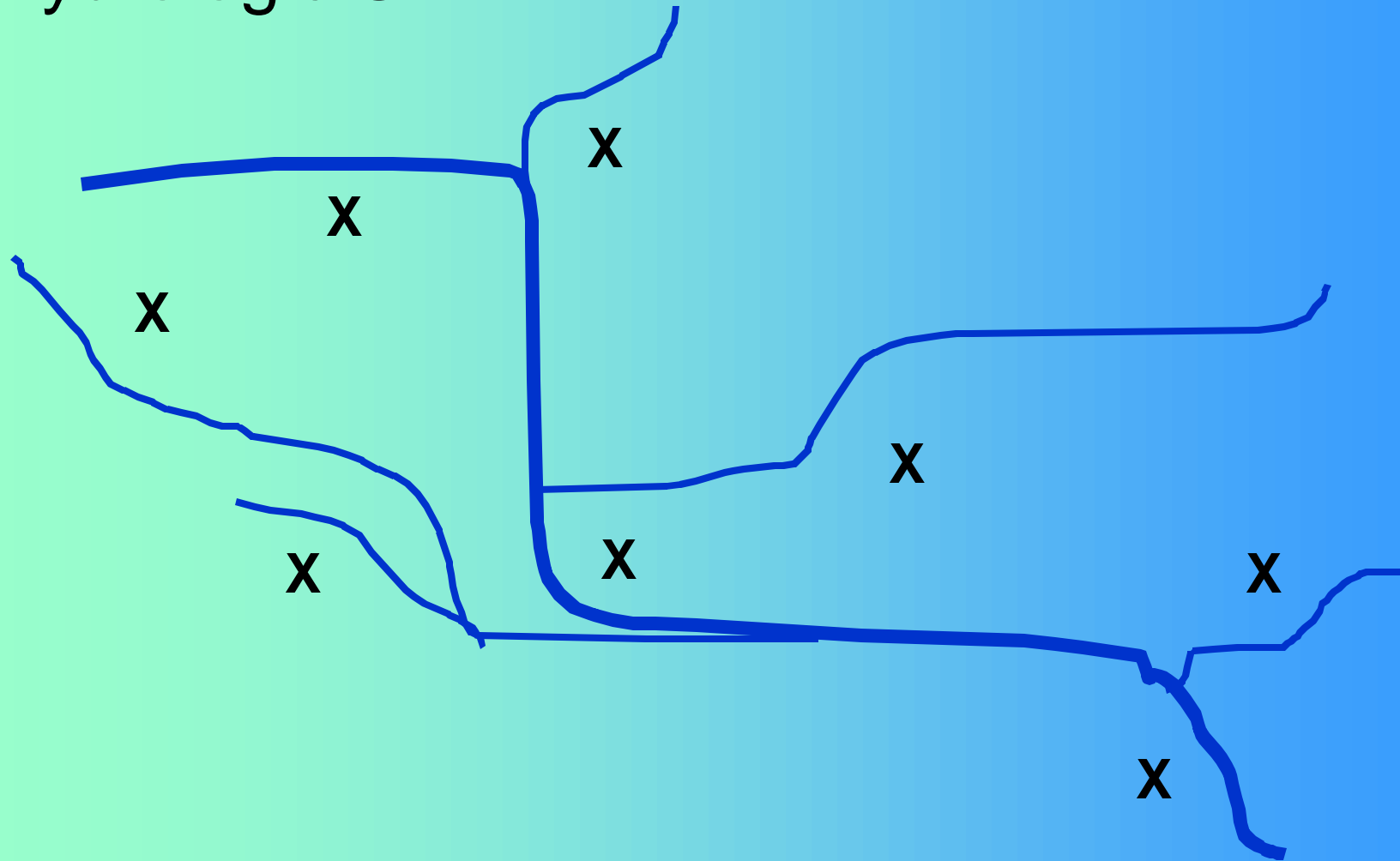
Weighted Average of 17 States

Potential Partnerships Based on Distance



Potential Partnerships Based on Hydrologic Unit

Assessing External Opportunities



System Organizational Structures

- Public - Local Government
- Public - Special Purpose District
- Private - For Profit
- Private - Not-for-Profit

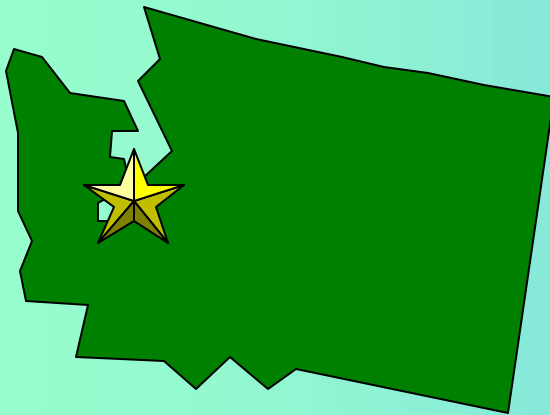
Assessing Organizational Structures

Assessing External Opportunities

| | Current Organizational Structure | Strengths | Weaknesses | Interest in Partnering |
|----------------|--|-----------|------------|---------------------------|
| System 1 | | | | |
| System 2 | | | | |
| System n... | | | | |

CASE STUDY

Kitsap Public Utility District, WA



- **KPUD is a municipal corporation**
 - Elected board
 - Incorporated boundaries = county
 - Formed in 1940's
 - Assumed operation of several systems in 1970's
- **Serves:**
 - 55 systems (1/2 are Group B)
 - 30,000 people
 - 8,000 service connections

Kitsap Public Utility District, WA

Services Offered

•UTILITY OPERATIONS

- Satellite management

KPUD

Operations

Preventive Maintenance

Water Quality Monitoring

Emergency Response

Record keeping

- Direct ownership

- Physical interconnection

- Satellite operation

System Owner

Financing

Rate Setting

Legal Liability

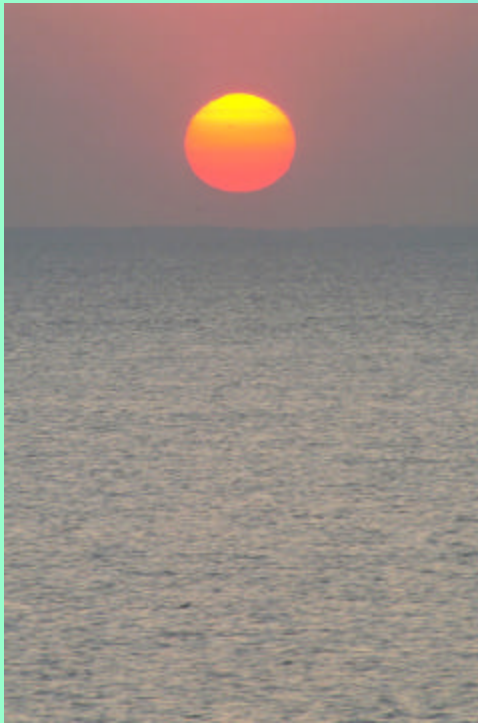
•CONTRACT & DATA SERVICES

- Wholesale supply
- Planning
- Management & monitoring
- Information services & TA

•SUPPORT ASSISTANCE

- Bulk purchase
- Training
- Source protection & resource studies
- Public education

Kitsap Public Utility District, WA RATES



- **Consolidated (Postage Stamp) rates**

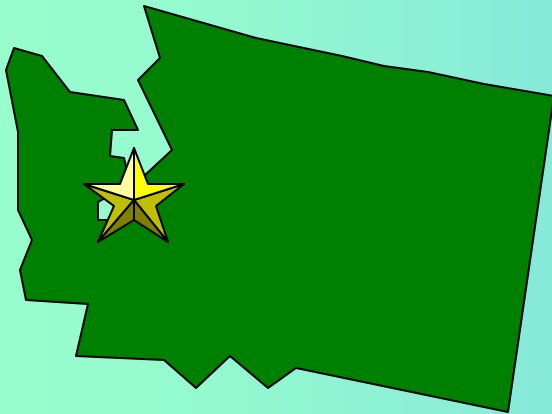
- All systems owned by KPUD pay the same rate

- **Customer charges**

- \$14/month Basic Service Charge (Fixed Costs)
- Increasing block rate (Commodity Charges cover Marginal Costs)
 - \$0.75-\$1.05/100 ft³
- Assessment for newly acquired systems
 - If needed
 - \$2,000-\$5,000 / connection
 - Payable over 20 years

CASE STUDY

Hansville Water District, WA



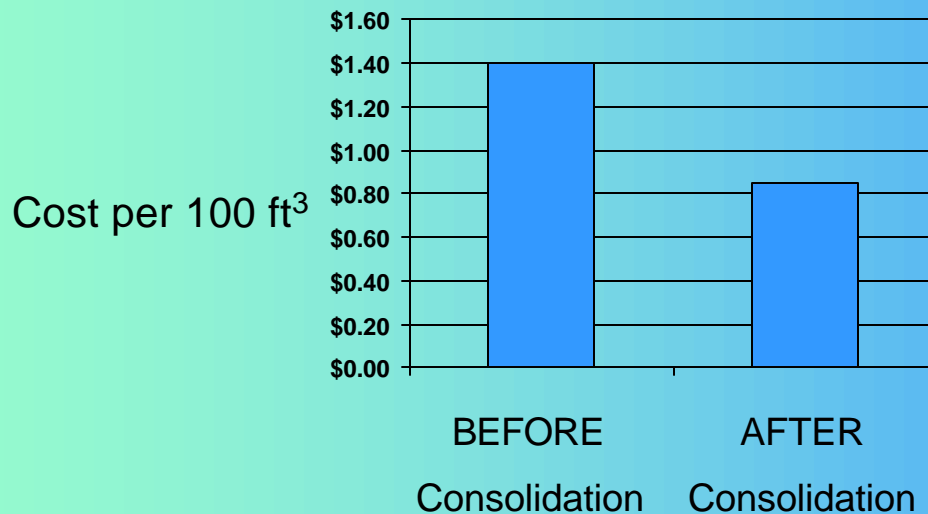
- 1,184 connections
- SW & GW
- Issues
 - Quantity
 - SWTR compliance
- Solution
 - Requested consolidation with KPUD

Hansville Water District, WA

- **KPUD tied Hansville into Kingston Water System**

- 41,000 ft of 10" transmission main
- Fire hydrants
- Booster station
- Steel storage tank

- **Rates for Hansville customers**

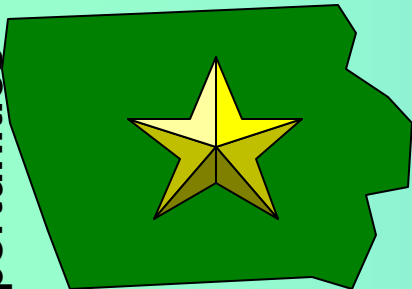


NO SPECIAL
ASSESSMENT

CASE STUDY

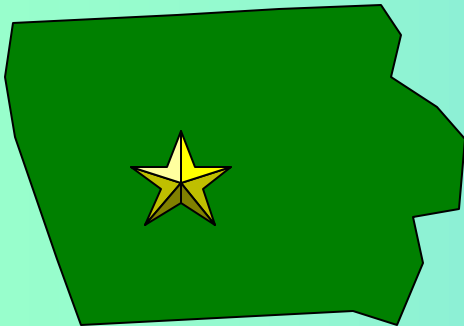
Central Iowa Water Association

- Serves 8,400 customers; 2.4 MGD
- Water purchased from Newton, Marshalltown, and Pella Water Works
- Provides service to 12 counties
 - Plans to expand to serve 6 more
- Provides direct retail service in 5 incorporated towns & 11 unincorporated communities
- 18 towns purchase bulk water
- 7 towns have emergency connections
- CIWA provides contract operation for 1 town's water and wastewater system



CASE STUDY

Sully, IA



City of Sully

- Provides water to 841 people
- Concerns about condition and adequacy of:
 - Treatment
 - Storage
 - Distribution
- In 1997 city commissioned consulting engineer to prepare study of water system facilities

City of Sully, IA -- Facilities Condition



Source Water

- 1 well
- 2,300 ft deep
- 110 gpm
- Average demand 58 gpm
- Semi-annual inspection and preventive maintenance program
- No backup well
- Emergency connection with CIWA



Treatment

- Iron & Manganese removal
 - Iron filters
 - Capacity 120 gpm
- RO Membrane Filtration for radium removal & softening
 - Capacity 110 gpm
 - Actual yield 80 gpm
 - Operating 20-22 hours/day
- Chlorination



Storage & Distribution

- Elevated tower
- 30,000 gal
- IDNR recommends 75,000 gal for 1,000 people
 - Emergency connection with CIWA
- Water loss 26%
- Low fire flows - mains need looping



Retail Services

- 840 people in 1996
- Expected to increase to 1,000 people within a few years

Major Issues and Options for City of Sully, IA

Adequate Water Supply and Storage Capacity

- Need backup supply and additional storage
 - Options:
 - Renew emergency contract with CIWA (CIWA serving other permanent demands)
 - Upgrade supply and storage
 - New well
 - New elevated tank
 - Full-Service connection with CIWA

Upgrading Water Treatment System

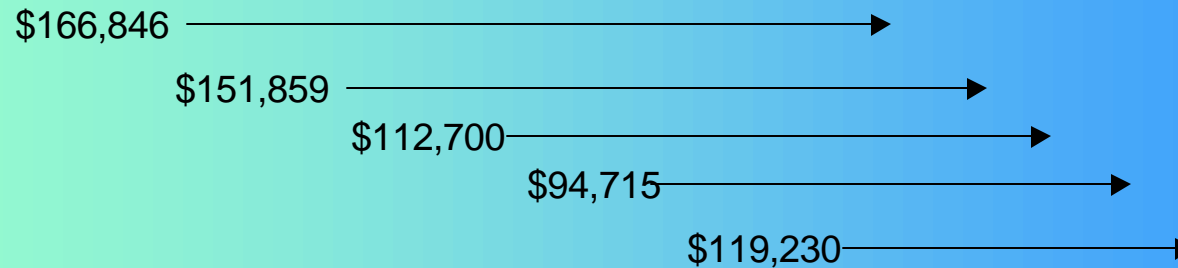
- Replace and upgrade iron filters, and
- Provide higher capacity radium removal
 - Add additional RO unit, or
 - Install lime softening, or
 - Install ion exchange
- OR, Full-service connection with CIWA

Distribution System Improvement

- Connect dead-end mains to improve water quality
- Loop mains to improve fire flow.

Sully, IA - Scenarios Evaluated

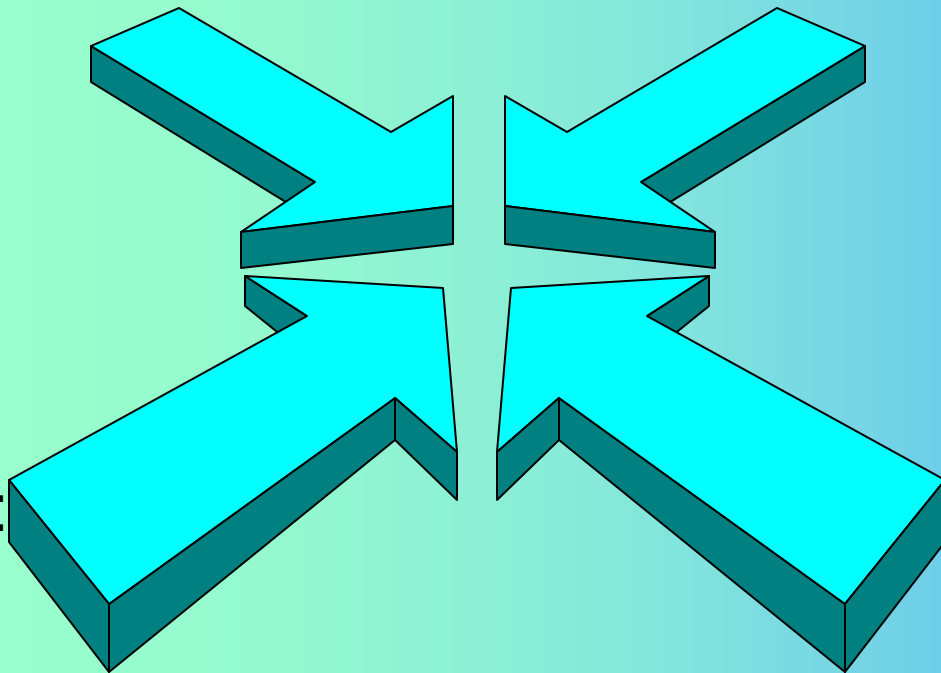
| | | | | | |
|--|--------|---|--------|---|---|
| EMERGENCY CONNECTION | | | X | X | |
| UPGRADE SUPPLY | X | X | | | |
| REPLACE IRON FILTERS | X | X | X | X | |
| RO • Replace • Upgrade | X X | | X X | | |
| UPGRADE STORAGE | X | X | | | |
| FULL-SERVICE BULK CONNECTION WITH CIWA | | | | | X |



Sully, IA -- Option Selected

•Full-service bulk connection partnership with CIWA

- Sully focuses on distribution and retail services
- CIWA offers economies of scale
- Sully gets out of treatment business - avoids future costs
- Sully avoids costs associated with further developing its own water supply



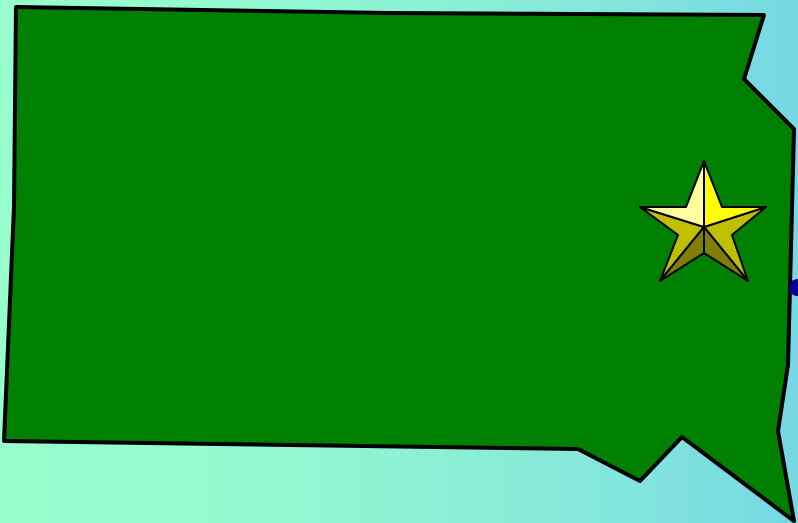
CASE STUDY

Aurora, SD

- Population 600
- System
 - Installed 1972
 - One 150 gpm Well
 - Disinfection & Fluoridation
 - One 50,000 gal elevated tower
 - Flow: Average 100 gpcd; Max 150 gpcd

Issues

- Nitrate contamination
- Hiring Certified Operator
- 20%-30% Unaccounted for water



Aurora, SD - Alternatives Considered

New Well Field & Treatment Owned by City

**New Well Field & Treatment Jointly Owned by
City and Big Sioux Rural Water System**

**Interconnect With & Purchase
Water Wholesale From City of
Brookings**

**Interconnect With & Purchase Water
Wholesale From the Brookings-Deuel Rural
Water System**

Aurora, SD

Capacity Perspective on Alternatives

Assessing External Opportunities

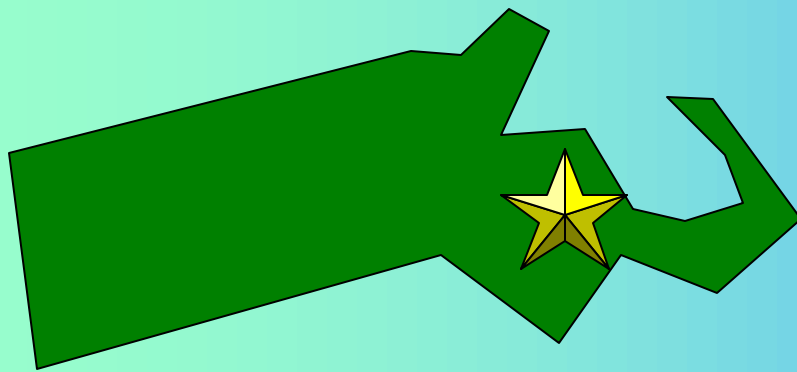
| | New Well & Treatment – City Owned | New Well & Treatment – Jointly Owned | Interconnect & Wholesale Purchase – Brookings | Interconnect & Wholesale Purchase – Brookings- Deuel |
|--|---|--|--|--|
| Nitrate Compliance | + | + | + | + |
| Control of Rates | + | + | - | - |
| Liability for Future Treatment | - | - | + | + |
| Certified Operator | - | - | + | + |
| Access to Technical & Managerial Assistance | - | + | + | + |
| \$/1000 gal | 4.67 | 3.75 | 3.21 | 3.30 |

+ = Advantage - = Disadvantage

CASE STUDY

Cohasset, MA

- System serves 7,000 people.
- 3 MGD SW Treatment Plant.
- Board of Water Commissioners
 - Part-time, volunteers
 - Were focused on managing day-to-day system operations
 - Could not find replacement for water system superintendent
 - Wanted to focus energy on planning; not on daily oversight



Cohasset, MA

- Board decided to contract out system operation.
- First 3-Year contract to a joint venture.
- Second 3-Year contract with American Water Services, Inc.
 - Full-Service management, operation, & maintenance contract.

AWS Responsibilities

Treatment Facilities
Distribution Facilities
Cross Connection Program
Meter Reading
Meter Repair &
Replacement
Customer Services
Accounting & Reporting
Personnel Administration

Town Responsibilities

Capital Improvement Decisions
Funding
Construction Contracting

Benefits of Privatization - Cohasset, MA

- Board Now Focuses On Long-Range Planning.
- Board Developed Comprehensive Capital Improvement Plan.
 - Water Main Improvements
 - Treatment System Upgrades
 - SCADA System Installed
 - New Storage Tank Constructed
- Rates Have Not Increased.